

### REMARKS

Applicants have carefully reviewed the Application in light of the Office Action mailed March 16, 2009. Claims 10-29 are pending in this Application. Claims 10-29 stand rejected under 35 U.S.C. § 103(a). Applicants respectfully request reconsideration and favorable action in this case.

#### Rejections under 35 U.S.C. § 103

In order to establish a prima facie case of obviousness, the references cited by the Examiner must disclose all claimed limitations. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974). Even if each limitation is disclosed in a combination of references, however, a claim composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art. *KSR Int'l. Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1741 (2007). Rather, the Examiner must identify an apparent reason to combine the known elements in the fashion claimed. *Id.* "Rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *Id.*, citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006). Finally, the reason must be free of the distortion caused by hindsight bias and may not rely on ex post reasoning. *KSR*, 127 S.Ct. at 1742. In addition, evidence that such a combination was uniquely challenging or difficult tends to show that a claim was not obvious. *Leapfrog Enterprises, Inc. v. Fisher-Price, Inc. and Mattel, Inc.*, 485 F.3d 1157, 1162 (Fed. Cir. 2007), citing *KSR*, 127 S.Ct. at 1741.

Claims 10-13, 15-23, and 25-29 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,790,516 issued to Perols Leif Mikael Gudmundson *et al.* (*Gudmundson*) in view of U.S. Patent No. 6,463,105 issued to Rajaram Ramesh (*Ramesh*), and further in view of U.S. Patent No. 6,700,866 issued to Jari M. Heinonen *et al.* (*Heinonen*). Claims 14 and 24 stand rejected under 35 U.S.C. § 103(a) as being unpatentable

over *Gudmundson* in view of *Rames*, *Hienonen*, and further in view of U.S. Patent No. 4,513,385 issued to David L. Muri ("*Muri*").

Applicants assert that the cited references each fail to teach or suggest all the elements of the pending Claims. For example, Independent Claim 10 recites, in part:

performing, on a send side and depending on the transmission characteristic, an adaptive pre-emphasis of a send signal for only a part of the carrier frequencies of the at least one sub-carrier band thereby reducing inter channel interference caused by at least two subscribers, wherein the carrier frequencies which are subject to the adaptive pre-emphasis are only frequencies located at an edge of the at least one sub-carrier band.

Independent Claim 20 recites a similar element. None of the cited references render Claims 10 and 20 obvious as each reference fails to teach or suggest the above-recited elements.

For example, the Examiner indicates that *Gudmundson* and *Rames* fail to "show adaptive pre-emphasis applied to frequencies located at an edge of one sub-carrier band." (Office Action, Page 4). Applicants agree but submit that not only does *Gudmundson* and *Rames* fail to teach or suggest the adaptive pre-emphasis applied to frequencies located at an edge of one sub-carrier band, each of the cited references also fails to teach or suggest all the above-recited elements.

The Examiner relies on various sections of *Gudmundson* and contends that each of the above-recited elements of Claim 10 is taught by *Gudmundson*. *Id.* Applicants disagree. For example, *Gudmundson* teaches methods and systems for pulse shaping data transmission in an orthogonal frequency division multiplexed system (OFDM). *See* Column 1, Lines 9-13; *see also* Column 3, Lines 65-67. At Column 4, Lines 15-22, as relied upon by the Examiner, *Gudmundson* discloses modulating a symbol period onto one a subcarrier to generate a plurality of modulated subcarriers. Nowhere in the relied upon section does *Gudmundson* teach or search (1) an adaptive pre-emphasis of a send signal for only a part of the carrier frequencies and (2) where the carrier frequencies which are subject to the adaptive pre-emphasis are only frequencies located at an edge of the at least one sub-carrier band, as recited in Independent Claim 10 and similarly recited in Independent Claim 20.

*Rames* fails to provide the deficiency shown above in *Gudmundson*. In particular, *Rames* fails to teach or suggest performing, on a send side and depending on the transmission characteristic, an adaptive pre-emphasis of a send signal for only a part of the carrier frequencies of the at least one sub-carrier band thereby reducing inter channel interference caused by at least two subscribers, wherein the carrier frequencies which are subject to the adaptive pre-emphasis are only frequencies located at an edge of the at least one sub-carrier band, as recited in Independent Claim 10 and similarly recited in Independent Claim 20.

*Heinonen* also fails to teach or suggest the above-recited elements. Referring to Column 6, Lines 5-67, as relied upon by the Examiner, *Heinonen* discloses a coarse frequency synchronization process where frequency alignment ranges are used, and where each frequency alignment range “corresponds to a lower edge of the frequency band of interest.” *Heinonen* also discloses that each frequency alignment range (element 602) is associated with “a set of tone bins that stores tone values generated from received tones that are believed to be within that frequency bin,” and where selected tones “are positioned on the outermost edge of the frequency band.” The positioning of tones and the corresponding ranges to an edge of a frequency band does not teach or suggest, explicitly or inherently, nor does it provide motivation to teach or suggest the carrier frequencies which are subject to the adaptive pre-emphasis are only frequencies located at an edge of the at least one sub-carrier band, as recited in Independent Claim 10 and similarly recited in Claim 20.

*Muri* also fails to teach or suggest the above recited elements. For example, *Muri* fails to teach or suggest performing, on a send side and depending on the transmission characteristic, an adaptive pre-emphasis of a send signal for only a part of the carrier frequencies of the at least one sub-carrier band thereby reducing inter channel interference caused by at least two subscribers, wherein the carrier frequencies which are subject to the adaptive pre-emphasis are only frequencies located at an edge of the at least one sub-carrier band, as recited in Independent Claim 10 and similarly recited in Claim 20.

As to findings of obviousness when a modification can be made, as proposed by the Examiner, the M.P.E.P. requires the Examiner to make and articulate each of the following findings:

- a finding that there was some teaching, suggestion, or motivation, either in the references themselves or in the knowledge generally available to one of skill in the art, to modify the reference or to combine reference teachings;
- a finding that there was reasonable expectation of success; and
- whatever additional findings based on the factual inquiries under *Graham v. John Deere Co.*, 383 U.S. 1 (1966) as may be necessary, in view of the facts of the case under consideration, to explain a conclusion of obviousness. M.P.E.P. § 2143(G).

In the present case, each of the required findings above has not been made. For example, the Examiner's reasoning behind the proposed combination of *Gundmundson*, *Ramesh*, and *Heinonen* is "to improve the inter-channel interference for the performance of the system," and is a mere conclusory statement as there is no evidence of record for the modification or assertion proposed by the Examiner. (Office Action, Page 4). Just as factual findings in a court case must be supported by admissible evidence of record (*e.g.*, documents, tangible things, sworn testimony), factual findings made in a patent prosecution must be supported by documentary evidence in the record. 37 C.F.R. § 1.104(c)(2); M.P.E.P. § 2144.03(C) (*e.g.*, references of record, declarations of those with ordinary skill in the art, etc.). If the Examiner relies on the Examiner's own personal knowledge to support a finding of what is known in the art, such finding must be supported with an affidavit or declaration setting forth specific factual statements and explanation to support the finding. 37 C.F.R. § 1.104(d)(2); M.P.E.P. § 2144.03(C).

For at least these reasons, Independent Claims 10 and 20, and all claims that depend therefrom, are patentably distinct over the cited references. Applicants respectfully request withdrawal of the rejections under 35 U.S.C § 103(a) and full allowance of all pending claims.

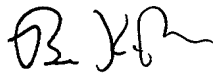
**CONCLUSION**

Applicants have made an earnest effort to place this case in condition for allowance in light of the remarks set forth above. Applicants respectfully request reconsideration of the pending claims.

Applicants believe there are no other fees due at this time, however, the Commissioner is hereby authorized to charge any fees necessary or credit any overpayment to Deposit Account No. 50-2148 of Baker Botts L.L.P.

If there are any matters concerning this Application that may be cleared up in a telephone conversation, please contact Applicants' attorney at 512.322.2684.

Respectfully submitted,  
BAKER BOTTS L.L.P.  
Attorney for Applicants



Brian K. Prewitt  
Registration No. 60,135

Date: May 18, 2009

SEND CORRESPONDENCE TO:  
BAKER BOTTS L.L.P.  
CUSTOMER ACCOUNT NO. **31625**  
512.322.2684  
512.322.8383 (fax)